

AMENDMENT TO THE SPECIFICATION

Page 1, line 1-3, please amend the title as follows:

~~INFORMATION INPUT APPARATUS, INFORMATION INPUT METHOD, AND  
RECORDING MEDIUM APPARATUS AND METHOD FOR INPUTTING REFLECTED  
LIGHT IMAGE OF A TARGET OBJECT~~

Page 1, line 3, before "BACKGROUND OF THE INVENTION" please insert the following paragraph:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a divisional application of Serial Number 09/268,645 filed March 16, 1999, and claims priority to the Japanese Application No. 10-066382, filed on March 17, 1998, the entire contents of which being incorporated herein by reference.

Page 1, line 9 through page 2, line 9, please amend the paragraph as follows:

As an input device to a computer, a mouse is prevalently used. However, the mouse is used to merely attain roles of a two-dimensional pointing device such as movement of the cursor, selection of a menu, and the like. Since information the mouse can process in two-dimensional information, the mouse can hardly select, e.g., an object with a depth in a three-dimensional space. On the other hand, when the mouse is used to animate a character upon creating an animation, it cannot easily naturally animate the character. In order to compensate for such difficulties in pointing in a three-dimensional space, three-dimensional pointing devices have been developed. For example, a three-dimensional pointing device 150 shown in Fig. 6-1 allows six ways of operations, i.e., pushing a central round portion forward,

pressing the center of that portion, pressing the rear end of that portion, lifting the entire portion upward, turning the entire portion clockwise, and turning the entire portion counterclockwise, and has six degrees of freedom. By assigning these six degrees of freedom to various instructions, the position (x, y, z) and directions (x-, y-, and z-axes) of a cursor in three-dimensional space can be controlled, or the view point position (x, y, z) and directions (x-, y-, and z-axes) with respect to the three-dimensional space can be controlled.

Page 7, lines 8-16, please amend the paragraph as follows:

In order to solve these problems, for example, a technique disclosed in USSN 08/953,667 (now U.S. Patent No. 6,144,366) is known. This technique acquires a distant image by extracting a reflected light image. However, this technique cannot obtain hue information of an object since it extracts the reflected light image. For this reason, two different types of cameras, i.e., a conventional imaging camera and a camera for extracting a reflected light image, are required.

Page 15, lines 15-23, please amend the paragraph as follows:

The sensor output is converted into digital data by an A/D converter 12 via an analog signal processor 9. A reflected light image processor 13 performs various kinds of processing using the digital image data. Upon interpreting the operator's hand action, the processor 13 extracts a two- or three-dimensional hand shape, and estimates ~~the hand action~~ an action of the hand 6. A detailed description of the processing in this reflected light image processor 13 will be omitted in this embodiment.

Page 16, after line 17 please insert the following text:

The control signal generator 16 generates control signals for controlling the vertical selector 15, the difference circuit 18 and the horizontal section 17. A controller 21 generates control signals to control the signal generator 16, the A/D converter 12 and the reflected light image processor 13.

Page 17, lines 2-10, please amend the paragraph as follows:

Fig. 4 is a flow chart showing the processing in the arrangement shown in Fig. 3. First, initialization is made (S100). When the LED emits light (step S101), the even lines receive light (step S102); when the LED ceases to emit light (step S103), the odd lines receive light (step S104). In this way, as shown in Fig. 3, charges received while light is emitted are stored in the even lines, and those received while light is not emitted are stored in the odd lines. These charges are read out via the difference circuit 18.

Page 17, lines 20-23, please amend the paragraph as follows:

Such operation continues until the contents of all the lines are transferred in the vertical direction S110. Upon completion of transfer, operation for emitting and receiving light is repeated.

Page 19, after line 23, please insert the following text:

A control signal generator 24 generates a control signal for controlling the sensor 22 for the visible light image. An analog signal processor 25 processes a reflective image signal and color image signal. A system controller 27 controls the whole system.

Page 24, lines 8-19, please amend the paragraph as follows:

FIG. 11 shows another example of the arrangement that can simultaneously sense a reflected light image and visible light image using a single sensor. Using a light ray splitting means 34 such as a dichroic mirror or the like, which is similar to that used in FIG. 7, light is split into object light of the light source and other light components. Shutter means 35 and 36 which can selectively pass or intercept these light components are provided. The light components that have passed through the shutter means are synthesized, and the synthesized light is guided to an optical sensor 38 near-infrared light and reflected light are synthesized with a light ray splitting means 37.